

UNDESCRIBED SPECIES OF CRANE-FLIES
FROM THE HIMALAYA MOUNTAINS
(DIPTERA: TIPULIDAE), VII*

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ABSTRACT

The following new species from Sikkim are defined: *Gonomyia* (*Protogonomyia*) *clista*; *G. (P.) acustylata*; *G. (P.) distifurca*; *G. (P.) megalomata*, and *G. (P.) thiorhopala*. An additional species, *G. (P.) khasiana* is from the Khasi Hills, Assam.

The preceding part under this general title was published in the *Journal of the New York Entomological Society*, 69: 121-130; 1961. Virtually all species here considered are from Sikkim where they were taken by Dr. Fernand Schmid in 1959. Schmid's great contributions to our knowledge of the insects of the Himalayas have been discussed in preceding parts of this series of papers and elsewhere. I am greatly indebted to him for the time and effort devoted to collecting these fragile flies. The types of the novelties are preserved in my personal collection.

***Gonomyia* (*Protogonomyia*) *clista* new species**

Size relatively large (wing 7 mm or more); general coloration black, the surface opaque by a sparse pruinosity, pronotum and mesonotal scutellum yellowed; legs dark brown or black; wings tinged with brown, *Sc* long, cell 1st *M*₂ closed; male hypopygium with outer lobe of basistyle slightly produced, the margin serrulate; apex of inner dististyle bispinous, provided with abundant long yellow setae.

MALE Length about 6.8-7 mm.; wing 7-7.5 mm.; antenna about 2.7-2.9 mm.

FEMALE Length about 6.5-7.5 mm.; wing 7.3-8.8 mm.

Rostrum and palpi brownish black. Antennae black, relatively long in

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Editorial note:

Publication of this manuscript marks the fiftieth year that Doctor Charles P. Alexander's manuscripts have appeared in the *Journal of the New York Entomological Society*. We are proud of this long association and hereby extend our best wishes to Dr. Alexander—now and for the future.

both sexes; basal flagellar segments oval, beyond the second more elongate, the fifth and succeeding segments long-subcylindrical, with long conspicuous verticils. Head black, pruinose, more heavily so in front.

Pronotal scutum dull black, scutellum and pretergites light yellow, the latter interrupted by a lateral flange on margin of praescutum before suture. Mesonotum black, the surface opaque by a sparse gray pruinosity; scutal callosities and posterior border of scutellum yellow; postnotum dull black, the cephalic margin of pleurotergite yellowed. Pleura black, sparsely pruinose, the ventral pteropleurite and metapleura more or less yellowed, in cases conspicuously so; dorsopleural region light yellow. Halteres blackened. Legs with coxae dull black; trochanters brownish yellow; femora brownish black, posterior pair paler, dark brown, tips blackened; tibiae and tarsi black. Wings tinged with brown, stigma very faintly darker, ill-delimited; veins dark brown. Veins with long trichia almost back to arculus; Cu_1 with trichia only near outer end. Venation: Sc long, Sc_1 ending very shortly before level of fork of Rs , Sc_1 alone subequal to $m-cu$; vein R_5 with outer half deflected caudad, cell R_3 at margin wide, more than three times R_2 ; cell 1st M_2 closed, much shorter than any of the veins beyond it; $m-cu$ at or close to fork of M .

Abdomen brownish black. Male hypopygium large. Tergal plate small, posterior border emarginate. Basistyle with outer apical angle flattened, triangularly produced, inner margin serrulate. Outer dististyle a broad flattened yellow blade, dilated at base, apex broadly obtuse; intermediate style distinctive, enlarged at apex, produced into a short black spine and provided with abundant long yellow setae; inner margin at near two-thirds the length with a much larger curved arm that terminates in an acute blackened point, base of style with abundant short setae and setulae; inner style shortest, the dilated apex with relatively few short spinoid setae and two much longer ones. Aedeagus flattened, broad, the apical point acute.

HOLOTYPE, ♂, Dikchu, Sikkim, 2300 feet, May 9, 1959 (Schmid). Allotype, ♀, Manu, Sikkim, 4920 feet, May 10, 1959. Paratopotype, 1 ♂; paratypes, 3 ♂♂ with the allotype; 1 ♂, Nampung, Sikkim, 3280 feet, May 8, 1959; 1 ♀, Mangang, Sikkim, 3600 feet, May 9, 1959; 1 ♀, Chateng, Sikkim, 8700 feet, May 22, 1959 (Schmid).

Gonomyia (Protogonomyia) clista is distinct from all known regional species of the subgenus by the closed cell 1st M_2 of the wings. The western Palaearctic *Gonomyia (Ellipteroides) albo-scutellata* (v. Roser) similarly has the cell closed but is placed in a different subgenus because of the structure of the ovipositor which has normal elongate slender cerci.

***Gonomyia (Protogonomyia) acustylata* new species**

Size relatively large (wing 6 mm. or more); general coloration of body and appendages black; wings strongly blackened, veins black; male hypo-

pygium with apical flange of outer lobe of basistyle extensive; arms of second dististyle relatively short; inner dististyle stout, terminating in an acute spine, surface of outer third with long stout setae.

MALE Length about 5–6 mm.; wing 6–7 mm.; antenna about 1.8–2.1 mm.

FEMALE Length about 5.5–6 mm.; wing 6.5–7 mm.

Rostrum, palpi and antennae black; flagellar segments oval, verticils of the more proximal segments long. Head dull black.

Thorax dull black, without distinct yellow or paler pattern. Halteres blackened. Legs uniformly black. Wings strongly suffused with black; veins black. Venation: *Sc* long, *Sc*₁ ending nearly opposite fork of *Rs*; cell *2nd M*₂ deep, about four to five times its petiole.

Abdomen, including genitalia of both sexes, black. Male hypopygium with apical glabrous flange of outer lobe of basistyle very extensive. Three dististyles; outer style slender, sinuous, gradually narrowed to a small obtuse head; second style with arms short, the longer one a slender straight rod, its stem with abundant setae; inner style distinctive, stout, narrowed outwardly into a spine, surface of outer third with abundant long stout setae. Aedeagus with numerous long pale setae.

HOLOTYPE, ♂, Tung, Sikkim, 4500 feet, August 2, 1959 (Schmid). Allotype, ♀. Paratopotypes, 4 ♂♀; paratypes, several ♂♀, Chumtang, Sikkim, 5120 feet, July 18, 1959; ♂♀, Bop, Sikkim, 5950 feet, July 15, 1959 (Schmid).

The present fly is best distinguished from other regional members of the subgenus by the structure of the male hypopygium, particularly the distinctive inner dististyle. The identities of certain Indian species in this group described by Brunetti remain in question. In 1912 he described *nigripes* in *Mesocyphona*, and *nigra* in *Gnophomyia*; in 1918, *gracilis* in *Mesocyphona*, *incompleta* in *Limnophila*. The types of all of these are females, although some were indicated as being males. The names *gracilis* and *incompleta* are invalidated by prior use in the genus *Gonomyia*; of the remaining species, *nigra* seems to be separable by the short *Sc*, in this regard coming closer to still other species known from the western Himalayas. The last name, *nigripes*, pertains to a species that still remains in doubt but may well be found to refer to some one or another of various later defined species in this region. The present fly differs from Brunetti's description of *nigripes* in the lack of any yellow color on the body and in the more blackened wings. Bagchi's figure of one of the types of *nigripes* shows *Sc* somewhat shorter than is the case in the present fly, ending at near three-fourths the length of *Rs*.

***Gonomyia (Protogonomyia) distifurca* new species**

Size above medium (wing of male 6.5 mm.); general coloration dull black, mesonotal scutellum obscure testaceous yellow; legs black; wings slightly darkened, *Sc* long; male hypopygium with outer lobe of basistyle relatively stout, without a flange; intermediate style very long and slender, setiferous, shallowly forked at tip; inner style broad, narrowed to a point, with a concentration of spinoid setae near tip.

MALE Length about 5.8 mm.; wing 6.5 mm.; antenna about 1.5 mm.

FEMALE Length about 5 mm.; wing 6.5 mm.

Rostrum brown, darker outwardly; palpi black. Antennae black; flagellar segments subcylindrical, a trifle shorter than the verticils. Head plumbeous, paler behind the antennae.

Pronotum plumbeous, anterior pretergites and sides of scutellum obscure yellow. Mesonotum chiefly blackened, sparsely pruinose; posterior border of scutellum obscure testaceous yellow. Pleura variegated dull black and obscure yellow, the darkest color on propleura, anepisternum, ventral sternopleurite and anterior pteropleurite, obscure yellow on pleurotergite, posterior pteropleurite and metapleura; dorsopleural and propleural membrane yellowed. Halteres brown, restrictedly more brightened at base, knob brownish black. Legs with coxae brownish black; trochanters paler, especially beneath; remainder of legs black, femoral bases restrictedly obscure yellow. Wings slightly darkened, not as conspicuously so as in some related species; stigma darker, long and inconspicuous; veins brown, paler in the prearcular region. Longitudinal veins with conspicuous macrotrichia, extending basad to arculus or even more basally on veins *R* and *1st A*. Venation: *Sc* long, *Sc*₁ ending about opposite fork of *Rs*; petiole of cell *2nd M*₂ short, a little longer than *m-cu*, the latter at fork of *M*.

Abdomen brownish black, the hypopygial appendages paler. Male hypopygium with outer lobe of basistyle relatively stout, with long setae but without a modified flange. Outer dististyle straight, tip slightly dilated; intermediate style very long and slender, bent at near two-thirds the length, shallowly forked at tip, mesal face of stem with an extended series of long setae; inner style subequal in length to the intermediate one, much broader, especially at about one-third the length, thence gradually narrowed to the acute tip, with a dense grouping of about a dozen spinoid setae at and near tip, with more normal setae at near midlength. Aedeagus expanded before the strongly curved tip, before apex with numerous long setae.

HOLOTYPE, ♂, Dikchu, Sikkim, 2300 feet, May 9, 1959 (Schmid). Allotype, ♀, pinned with type. Paratypes, 2 ♂♂, Mangang, Sikkim, 3600 feet, May 9, 1959 (Schmid).

Gonomyia (Protogonomyia) distifurca is readily told from other regional species by the structure of the male hypopygium, especially the intermediate and inner dististyles. The most similar species are *G. (P.) acustylata* new species and *G. (P.) nilgiri-ana* Alexander.

Gonomyia (Protogonomyia) khasiana new species

MALE Length about 5.5 mm.; wing 6.5 mm.

Characters generally as in *nigripes*, differing especially in the structure of the male hypopygium. Wings very faintly infuscated, much paler than in *nigripes*; veins pale. Male hypopygium with the glabrous apical flange of outer lobe of basistyle extensive. Outer dististyle with stem short, the head expanded, nearly as long; intermediate style with the slender branch short, less than twice the dilated inner arm; inner style distinctive, appearing as a stout nearly straight blade that is produced into a basal lobe, inner apical angle extended into a strong spine; remainder of apex obliquely truncated, with about four or five spinoid setae.

HOLOTYPE, ♂, Cherrapunji, Khasi Hills, Assam, 4000 feet, August 1935 (S. Sircar).

Among the numerous regional species of the subgenus the present fly requires comparison with *Gonomyia (Protogonomyia) nigripes* (Brunetti). What appears to represent the true *nigripes* is a very different fly, with the hypopygial structure quite distinct. In 1918 Brunetti described *G. (P.) gracilis* (as a *Mesocyphona*) from the Darrang District, Assam-Bhutan Frontier, considered by Edwards (1924) as perhaps being a synonym of *nigripes*. This now appears to represent a distinct species but the name is invalidated by the earlier use in the genus by Skuse, 1890.

Gonomyia (Protogonomyia) megalomata new species

Size large (wing 7.5 mm or more); coloration of body and appendages black; male hypopygium with the flange of outer lobe of basistyle very large and flattened, tip obtusely rounded; intermediate style very shallowly forked at tip, the outer part terminating in two black teeth; inner style broad, tip obliquely obtuse, setae small, restricted to the outer third.

MALE Length about 7-7.5 mm.; wing 7.5-8.5 mm.; antenna about 2 mm.

FEMALE Length about 6.8-7 mm.; wing 8-8.5 mm.

Rostrum, palpi and antennae black; basal flagellar segments oval, the outer ones becoming long and slender. Head black.

Thorax black, the surface dull, especially the more pruinose pleura. Halteres and legs black. Wings tinged with blackish; stigmal region narrow, slightly darker than the ground; veins black.

Abdomen black, including the genitalia of both sexes. Ovipositor with cerci very small, as in the subgenus. Male hypopygium with the flange of outer lobe of basistyle very large and flattened, apex obtusely rounded, setae of lobe relatively small and weak, the longest less than twice the flange. Outer dististyle slender, straight, very slightly dilated outwardly, tip obtuse, base irregularly enlarged; intermediate style terminating in a compact black head, very shallowly bifid, the outer part terminating in two short

teeth, inner arm truncate, inner margin of stem beyond midlength produced into a setiferous cushion; inner style broad, with the usual basal extension, tip obliquely obtuse, setae numerous but very small and weak, restricted to outer third of style. Aedeagus with abundant setae, apex curved into a hook.

HOLOTYPE, ♂, Dikchu, Sikkim, 2300 feet, May 9, 1959 (Schmid). Allotopotype, ♀, pinned with type. Paratopotypes, 6 ♂ ♀; paratypes, ♂ ♀, Mangalbarey, Sikkim, 2800 feet, April 30, 1959; ♂ ♀, Mangang, Sikkim, 3600 feet, May 9, 1959; 1 ♀, Manu, Sikkim, 4920 feet, May 10, 1959; ♂, Nampung, Sikkim, 3280 feet, May 8, 1959; ♂, Teng, Sikkim, 4600 feet, May 12, 1959 (Schmid).

Gonomyia (Protogonomyia) megalomata is readily distinguished from other regional species by the hypopygial structure, especially the nature of the flange of outer lobe of basistyle and all three dististyles, particularly the intermediate style.

***Gonomyia (Protogonomyia) thiorhopala* new species**

Size medium (wing of male 6.3 mm.); general coloration dull black, pronotum, dorsopleural region and areas on the pleura yellow; knobs of halteres light sulphur yellow; legs black; wings very weakly darkened, stigma oval, dark brown; macrotrichia lacking on veins *Sc* or *Cu₁*; *Sc* ending about opposite two-thirds *Rs*; male hypopygium with the outer dististyle terminating in a flattened cultrate blade; intermediate style with the longer outer arm very slender, inner arm suboval, pointed at tip, surface with abundant setae; tip of aedeagus not decurved.

MALE Length about 5.5–5.6 mm.; wing 6.3–6.4 mm.; antenna about 1.6 mm.

Rostrum and palpi black. Antennae black; flagellar segments oval, subequal to the longest verticils. Head black, sparsely pruinose to appear plumbeous.

Pronotum dull black, pruinose, sides of scutellum, the pretergites, dorsopleural membrane and an area behind the propleura light yellow. Mesonotum black, surface subnitidous, more heavily pruinose on sides; pseudosutural foveae black. Pleura black, sparsely pruinose, the membrane in the meral and metapleural regions yellow. Halteres with stem dusky, knob light yellow, very conspicuous. Legs with coxae plumbeous; remainder of legs black; femoral vestiture appressed, inconspicuous. Wings very weakly darkened, stigma oval, dark brown; veins brown. Several veins beyond cord with macrotrichia, lacking on distal section of *Cu₁*, very few on *R₂₊₃₊₄*; basal of cord without trichia on *Sc* or *Cu₁*, virtually lacking on 1st *A*, a few on outer half or less of *M* and 2nd *A*. Venation: *Sc* of moderate length, *Sc₁* ending about opposite two-thirds *Rs*, *Sc₂* at near one-thirds; a crossvein in cell *Sc* immediately above the arculus; veins *R₂* and *R₄* diverging outwardly, cell *R₂* at margin about one-third *R₃*; cell 2nd *M₂* nearly three times its petiole; *m-cu* about one-third its length beyond fork of *M*.

Abdomen black. Male hypopygium with outer lobe of basistyle only slightly produced, provided with long setae, apex subtruncate. Outer dististyle bent at a right angle at near midlength, the outer part a glabrous flattened cultrate blade, with a long carina on face at midwidth; intermediate style with the arms very dissimilar, the longer one dilated at base, gradually narrowed outwardly, the slender tip recurved, the shorter arm suboval, with abundant short setae, apex a short point; inner style generally similar in shape to the inner arm of the intermediate style, surface with recurved setae, tip broadly obtuse. Aedeagus with apex not decurved, as is the case in most other species of the subgenus.

HOLOTYPE, ♂, Singbeng, Sikkim, 4920 feet, April 26, 1959 (Schmid). Paratype, ♂, Gangtok, Sikkim, 5570 feet, May 3, 1959 (Schmid).

Gonomyia (Protogonomyia) thiorhopala is readily told from the other numerous regional species of the subgenus by the sulphur yellow knobs of the halteres, contrasting with the general dark coloration of the body.